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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/579,576	05/25/2000	Ho-Jin Kweon	003364.P048	7384

7590

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EXAMINER

WILLS, MONIQUE M

ART UNIT

PAPER NUMBER

1745

8

DATE MAILED: 04/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-8

Office Action Summary

Application No.

09/579,576

Applicant(s)

KWEON ET AL.

Examiner

Wills M Monique

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is responsive to the amendment filed February 1, 2002. The rejection of claims 1-4 under 35 U.S.C. 102(a) as being anticipated by Ikawa et al. U.S. Patent 5,922,491 is overcome. The rejection of claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikawa et al. U.S. Patent 5,922,491 is overcome. However the rejection of claims 1 & 3 under 35 U.S.C. 102(b) as being anticipated by Miyasaka U.S. Patent 5,869,208 is maintained. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikawa et al. U.S. Patent 5,922,491 and further in view of Lu et al. U.S. Patent 6,348,182. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikawa et al. U.S. Patent 5,922,491 as applied to claim 1 above, and further in view of Lu et al. U.S. Patent 6,348,182.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 & 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyasaka U.S. Patent 5,869,208.

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Miyasaka teaches a positive electrode including a lithiated transition and a carbonaceous metal, such as graphite or acetylene black (col. 12, lines 5-15). The lithiated transition metal may be selected from $\text{Li}_x \text{MnO}_{2-z} \text{A}_z$ (No. 1 on Table 1) and $\text{Li}_x \text{Mn}_{2-y} \text{M}' \text{A}_4$ (No. 2, 8, 25 & 29 on Table 1). Miyasaka teaches that the positive electrode sheet can be prepared by coating a mixture of lithium manganese-metal complex oxide, electroconductive material, binder and filler on a collector. See column 8, lines 1-6. The filler includes organic solvents such as polypropylene and polyethylene. See column 8, lines 43-48. The elements Co, Cr, Mg and Ce are added to lithium manganese dioxide. Therefore, the instant claims are anticipated by Miyasaka.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikawa et al. U.S. Patent 5,922,491 and further in view of Lu et al. U.S. Patent 6,348,182.

Ikawa teaches a positive electrode including a lithiated transition metal and a semi-metal additive including Al and B (col. 25, lines 60-65 and col. 26 lines 5-30). Metal oxides may also be included (col. 9 lines 25-35). The lithiated transition metal

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may be selected from LiMnO_2 (col. 25, lines 60-65) (subject formula (1)). The additives were employed at 0.2% by weight (col. 25, lines 20-25). The reference also teaches the addition of a fluorine binder during preparation of the electrode.

The reference is silent to employing an organic solvent.

However, Lu teaches that it is conventional to employ organic solvents in order to prepare lithium manganese oxide spinel structures.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the organic solvent of Lu in the electrode of Ikawa, because the secondary reference teaches that it is well known in the art to use organic solvents to aid mixing of electrode material.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikawa et al. U.S. Patent 5,922,491 as applied to claim 1 above, and further in view of Lu et al. U.S. Patent 6,348,182.

Ikawa teaches a positive electrode including a lithiated transition metal and a semi-metal additive including Al and B (col. 25, lines 60-65 and col. 26 lines 5-30).

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Metal oxides may also be included (col. 9 lines 25-35). The lithiated transition metal may be selected from LiMnO_2 (col. 25, lines 60-65). The additives were employed at 0.2% by weight (col. 25, lines 20-25). The positive electrode is made by the process of; mixing said constituents and applying the mixture to a current collector (col. 25, lines 20-35).

The reference is silent to adding an organic solvent to the mixture.

However, Lu teaches that it is conventional to employ organic solvents in order to prepare lithium manganese oxide spinel structures.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the organic solvent of Lu in the electrode of Ikawa, because the secondary reference teaches that it is well known in the art to use organic solvents to aid mixing of electrode material.

Response to Arguments

The Applicant asserts that the invention is patentably distinct from Ikawa, because Ikawa teaches a positive active material, wherein the claims recite a positive active material composition. This argument is not persuasive. Irrespective of labeling both materials are in fact compositions.

The Applicant also asserts that Ikawa teaches an additive that is doped into the positive active material, by adding the elements after heating the lithium oxide compound. This argument is not persuasive. In column 25, lines 15-30 the references

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teaches adding elements such as Al and B to a lithium oxide compound before heating. Thus said elements are not doped, but a part of the material composition.

Regarding the Miyasaka reference, applicant contends that the reference does no teach additives as required by claims 1 and 3. However, Table 1 discloses several elements added in lithium manganese oxides including Co, Cr, Mg and Ce. Therefore, the reference anticipates claims 1 & 3 as written.

Regarding the Official Notice of using electrolyte solvents to electrodes, Lu '182 demonstrates that such use is conventional.

Conclusions

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (703) 305-0073. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 703-308-2383.

The unofficial fax number is (703) 305-3599. The Official fax number for non-final amendments is 703-872-9310. The Official fax number for after final amendments is 703-872-9311.

Mw

04/10/02


Patrick Ryan
Supervisory Patent Examiner
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